

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-13. (Canceled).

14. (New) A warm-up method for an internal combustion engine, comprising;  
increasing a temperature of the CO<sub>2</sub> absorbing and releasing agent, which absorbs CO<sub>2</sub> contained in an exhaust gas in a first temperature range and which releases the CO<sub>2</sub> absorbed therein in a second temperature range that is higher than the first temperature range, to the second temperature range which is higher than the first temperature range; and  
supplying the CO<sub>2</sub> released from the CO<sub>2</sub> absorbing and releasing agent into a component of the internal combustion engine.

15. (New) The warm-up method according to claim 14, wherein  
the component comprises an exhaust gas purification catalyst that purifies the exhaust gas discharged from the internal combustion engine.

16. (New) The warm-up method according to claim 14, wherein  
the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine.

17. (New) The warm-up method according to claim 15, wherein  
the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine.

18. (New) The warm-up method according to claim 14, wherein  
the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought  
into the first temperature range after a command for stopping the internal combustion engine  
is issued, and the temperature of the CO<sub>2</sub> absorbing and releasing agent is further increased to  
be brought into the second temperature range after a command for starting the internal  
combustion engine is issued.

19. (New) The warm-up method according to claim 15, wherein  
the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought  
into the first temperature range after a command for stopping the internal combustion engine  
is issued, and the temperature of the CO<sub>2</sub> absorbing and releasing agent is further increased to  
be brought into the second temperature range after a command for starting the internal  
combustion engine is issued.

20. (New) The warm-up method according to claim 16, wherein  
the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought  
into the first temperature range after a command for stopping the internal combustion engine  
is issued, and the temperature of the CO<sub>2</sub> absorbing and releasing agent is further increased to  
be brought into the second temperature range after a command for starting the internal  
combustion engine is issued.

21. (New) The warm-up method according to claim 17, wherein  
the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought  
into the first temperature range after a command for stopping the internal combustion engine

is issued, and the temperature of the CO<sub>2</sub> absorbing and releasing agent is further increased to be brought into the second temperature range after a command for starting the internal combustion engine is issued.

22. (New) A warm-up system for an internal combustion engine, comprising;  
a CO<sub>2</sub> absorbing and releasing agent that absorbs CO<sub>2</sub> contained in an exhaust gas in a first temperature range, and releases the CO<sub>2</sub> absorbed therein in a second temperature range that is higher than the first temperature range,  
a heating unit that increases a temperature of the CO<sub>2</sub> absorbing and releasing agent;  
and  
a temperature control unit that controls an operation of the heating unit such that the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range, wherein  
the CO<sub>2</sub> absorbing and releasing agent is provided to supply the CO<sub>2</sub> released therefrom to a component of the internal combustion engine.

23. (New) The warm-up system according to claim 22, wherein  
the heating unit comprises an electric heater.

24. (New) The warm-up system according to claim 22, further comprising  
an EGR passage that connects an exhaust passage and an intake passage of the internal combustion engine, and an EGR valve that selects an operation between connection and disconnection of the EGR passage, wherein:

the CO<sub>2</sub> absorbing and releasing agent is provided in the exhaust passage upstream of a joint portion between the EGR passage and the exhaust passage;

the component comprises an exhaust gas purification catalyst provided downstream of the joint portion; and

the temperature control unit controls an operation of the EGR valve such that the EGR passage is disconnected when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

25. (New) The warm-up system according to claim 22, further comprising a turbo charger having a variable nozzle in an exhaust turbine, wherein the CO<sub>2</sub> absorbing and releasing agent is provided in the exhaust passage upstream of the turbo charger;

the component comprises an exhaust gas purification catalyst provided downstream of the turbo charger; and

the temperature control unit opens the variable nozzle when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

26. (New) The warm-up system according to claim 22, further comprising a turbo charger having a variable nozzle in an exhaust turbine, wherein the CO<sub>2</sub> absorbing and releasing agent is provided in the exhaust passage downstream of the turbo charger;

the component comprises an exhaust gas purification catalyst provided downstream of the turbo charger; and

the temperature control unit closes the variable nozzle when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

27. (New) The warm-up system according to claim 22, further comprising  
an EGR passage that connects an exhaust passage and an intake passage of the internal combustion engine and an EGR valve that selects an operation between connection and disconnection of the EGR passage, wherein

the CO<sub>2</sub> absorbing and releasing agent is provided in the exhaust passage upstream of a joint portion between the EGR passage and the exhaust passage;

the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine; and

the temperature control unit controls an operation of the EGR valve such that the EGR passage is connected when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

28. (New) The warm-up system according to claim 27, further comprising  
a turbo charger having a variable nozzle in an exhaust turbine, wherein  
the temperature control unit closes the variable nozzle when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

29. (New) The warm-up system according to claim 22, wherein:  
the internal combustion engine is provided with a throttle valve; and  
the temperature control unit closes the throttle valve when the temperature of the CO<sub>2</sub> absorbing and releasing agent is increased to be brought into the second temperature range.

30. (New) The warm-up system according to claim 22, wherein

the temperature control unit controls the heating unit to increase the temperature of the CO<sub>2</sub> absorbing and releasing agent to be brought into the first temperature range after a command for stopping the internal combustion engine is issued, and to further increase the temperature of the CO<sub>2</sub> absorbing and releasing agent to be brought into the second temperature range after a command for starting the internal combustion engine is issued.